What is claimed is:

1. A method of operation of a dual path drive rotatably driving a threshing rotor of an agricultural combine, for decelerating the rotor from a rotating state, comprising the steps of:

(a) providing a planetary gear arrangement having an output connected to the rotor for rotation therewith, a first rotatable input connected in rotatably driven relation to a rotatable output of a variable speed rotatable power source controllably operable by a controller for variably rotating the output thereof, and the gear arrangement including a second input connectable by engagement or operation of a first device in rotatably driven relation to a rotatable output of an engine of the combine, the second input also being connectable by engagement or operation of a second device to a fixed element of the combine so as to be nonrotatable;

(b) after a rotor disengage command is received by the controller, controlling a speed of rotation of the rotatable output of the variable speed rotatable power source to change the rotational speed of the first input such that a rotational speed of the second input is slowed to a speed at which the second device can be engaged or operated for connecting the second input to the fixed element so as to be nonrotatable; then

(c) controlling a speed of rotation of the rotatable output of the variable speed rotatable power source to slow a rotational speed of the output of the planetary gear arrangement and the rotor to a desired lower speed.

2. The method of claim 1, where in step (b) before the speed of rotation of the output of the rotatable power source is controlled to slow the rotational speed of the second input, the first device is disengaged or operated to disconnect the second input from the engine.

3. The method of claim 2, further comprising in step (b) after disconnecting the second input from the engine, the step of allowing the rotor to passively decelerate to a speed at which the rotation of the rotatable output of the variable speed rotatable power source can be used to slow the rotational speed of the first input.

4. The method of claim 3, further comprising in step (b) before allowing the rotor to passively decelerate, with the first device connecting the second input to the engine, controlling a speed of rotation of the rotatable output of the variable speed rotatable power source to slow a rotational speed of the output of the planetary gear arrangement and the rotor to a desired lower speed, then disengaging or operating the first device for disconnecting the second input from the engine.

5. The method of claim 1, wherein the second device is a ring-to-frame clutch.

6. The method of claim 1, wherein the first device is an engine-to-ring clutch.

7. The method of claim 1, wherein the variable speed rotatable power source comprises a fluid

motor, and in step (b) the controlled speed is less than a maximum speed for the motor.

8. The method of claim 1, wherein the rotatable power source is rotated to bring the speed of the second input to zero prior to connection thereof to the fixed element.

9. The method of claim 1, wherein the rotatable power source comprises an electric motor.

10. The method of claim 1, where in step (b) the controller first determines a speed and direction of rotation of the rotatable power source for changing the rotational speed of the first input such that the rotational speed of the second input is slowed to the speed at which the second device can be engaged or operated for connecting the second input to the fixed element so as to be nonrotatable.

11. The method of claim 9, where in step (b) the rotatable power source is operated for changing the rotational speed of the ring gear.

12. A method of operation of a dual path drive rotatably driving a threshing rotor of an agricultural combine, for decelerating the rotor from a rotating state, comprising the steps of:

(a) providing a planetary gear arrangement having an output connected to the rotor for rotation therewith, a first rotatable input connected in rotatably driven relation to a rotatable output of a variable speed rotatable power source controllably operable by a controller for variably rotating the output thereof, and the gear arrangement including a

second input connectable by engagement or operation of a first device in rotatably driven relation to a rotatable output of an engine of the combine, the second input also being connectable by engagement or operation of a second device to a fixed element of the combine so as to be nonrotatable;

(b) after a rotor disengage command is received by the controller, determining a speed of rotation of the rotatable output of the variable speed rotatable power source for changing a rotational speed of the first input for slowing a rotational speed of the second input to a predetermined speed at which the second device can be engaged or operated for fixedly connecting the second input to the fixed element, without exceeding a maximum speed of the power source; then

(c) controlling the variable speed rotatable power source to rotate the output thereof at the determined speed to change the rotational speed of the first input so as to slow the rotational speed of the second input to the predetermined speed; then

(d) engaging or operating the second device for fixedly connecting the second input to the fixed element; and then

(e) controlling the speed of rotation of the rotatable output of the variable speed rotatable power source to slow the rotational speed of the output of the planetary gear arrangement and the rotor to a desired lower speed.

13. The method of claim 12, wherein step (b) includes the further step of disengaging or operating the first device to disconnect the second input from the engine.

14. The method of claim 13, further comprising in step (b) after disconnecting the second input from the engine, the step of allowing the rotor to passively decelerate to a speed at which the rotation of the rotatable output of the variable speed rotatable power source can be used to change the rotational speed of the first input.

15. The method of claim 14, further comprising in step (b) controlling a speed of rotation of the rotatable output of the variable speed rotatable power source to slow a rotational speed of the output of the planetary gear arrangement and the rotor to a desired lower speed, then disengaging or operating the first device for disconnecting the second input from the engine.

16. The method of claim 12, wherein the second device is a ring-to-frame clutch.

17. The method of claim 12, wherein the first device is an engine-to-ring clutch.

18. The method of claim 12, wherein the variable speed rotatable power source comprises a fluid motor, and in step (b) the controlled speed is less than a maximum speed for the motor.

19. A dual path drive for a threshing rotor of an agricultural combine, comprising:

a planetary gear arrangement having an output connected to the rotor for rotation therewith, a first rotatable input, and a second rotatable input;

a variable speed power source having a rotatable output connected to the first rotatable input of the planetary gear arrangement;

a controller operably connected to the variable speed power source for controlling a speed of rotation of the rotatable output thereof;

a first device operable for connecting the second input of the planetary gear arrangement in rotatably driven relation to a rotatable output of an engine of the combine; and

a second device operable for connecting the second input of the planetary gear arrangement when rotating at a predetermined speed to a fixed element of the combine so as to be nonrotatable;

wherein when a command to disengage the rotor is received by the controller, the controller will determine a speed of rotation of the rotatable output of the power source for changing a rotational speed of the first input for slowing a rotational speed of the second input to the predetermined speed at which the second device can be operated for fixedly connecting the second input to the fixed element without exceeding a maximum speed of the power source, and then the controller will control the power source to rotate the output thereof at the determined speed to change the rotational speed of the first input so as to slow the rotational speed of the second input to the predetermined speed and then operate the second device for fixedly connecting the second input to the fixed element, then control the speed of rotation of the rotatable output of the power source to slow the rotational speed of the output of the planetary gear arrangement and the rotor to a desired lower speed.

20. The drive of claim 19, wherein the controller is further operable for operating the first device to disconnect the second input from the engine prior to changing the rotational speed of the first input.

21. The drive of claim 20, wherein the controller will change the rotational speed of the first input for slowing a rotational speed of the rotating output prior to operating the first device to disconnect the second input from the engine.

22. The drive of claim 19, wherein the second device is a ring-to-frame clutch.

23. The drive of claim 19, wherein the first device is an engine-to-ring clutch.

24. The drive of claim 19, wherein the variable speed rotatable power source comprises a fluid motor, and the maximum speed is a maximum speed for the motor.